This listing of claims replaces all prior versions, and listings of claims in the instant application:

Listing of Claims:

1-58 (Canceled)

59. (Currently Amended) An application software program, comprising:

an object-oriented, verifiable, type-safe and pointer-safe sequence of instructions residing on a computer-readable medium, said instructions comprising operation codes and operands, said program operable to be loaded to and executed by a resource-constrained device, said instructions previously converted from at least one class file, said conversion transforming at least one reference, of at least one of said instructions, to information in a constant pool to data inlined directly in at least one operand or opcode of said at least one of said instructions so that said at least one reference to information in said constant pool is eliminated because accessing said information in any constant pool is unnecessary for said at least one of said instructions.

60. (Previously Presented) The software program of claim 59 wherein one or more of said references to said constant pool are transformed into inline data in operands in one or more of said instructions.

61. (Previously Presented) The software program of claim 59 wherein one or more of said references to said constant pool are transformed into inline data in operation codes in one or more of said instructions.

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62. (Previously Presented) The software program of claim 59 wherein said resource-constrained. device is based on a 16-bit processor architecture.

63. (Previously Presented) The software program of claim 59 wherein said resource-constrained device is based on an 8-bit processor architecture.

64. (Previously Presented) The software program of claim 59 wherein said resource-constrained device comprises a random access memory with a capacity of no more than about 64 kilo-bytes.

65. (Previously Presented) The software program of claim 59 wherein said resource-constrained device comprises a random access memory with a capacity of no more than about 4 kilo-bytes.

66. (Previously Presented) The software program of claim 59 wherein said instructions are configured for execution by a virtual machine running on a microprocessor residing on said resource-constrained device.

67. (Previously Presented) The software program of claim 59 wherein said resource-constrained device comprises a smart card.

68. (Previously Presented) The software program of claim 59 wherein said resource-constrained device comprises an application-specific integrated circuit (ASIC).

69. (Currently Amended) An application software program, comprising:

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an object-oriented, verifiable, type-safe and pointer-safe sequence of instructions residing on a computer-readable medium, said instructions comprising operation codes and operands, said program operable to be loaded to and executed by a resource-constrained device, said instructions previously converted from at least one class file, said instructions comprising at least one composite instruction for performing an operation on a current object, the execution of said at least one composite instruction, on said resource-constrained device, generating a result functionally equivalent to a result generated by operations ~~on said current object~~ resulting from sequential execution of two or more other instructions so that said sequential execution of said two or more other instructions is replaced by said execution of said composite instruction in said sequence of instructions executed on said resource-constrained device.

70. (Previously Presented) The software program of claim 69 wherein said resource-constrained device is based on a 16-bit processor architecture.

71. (Previously Presented) The software program of claim 69 wherein said resource-constrained device is based, on an 8-bit processor architecture.

72. (Previously Presented) The software program of claim 69 wherein said resource-constrained device comprises a random access memory with a capacity of no more than about 64 kilo-bytes.

73. (Previously Presented) The software program of claim 69 wherein said resource-constrained device comprises a random

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access memory with a capacity of no more than about 4 kilo-bytes.

74. (Previously Presented) The software program of claim 69 wherein said instructions are configured for execution by a virtual machine running on a microprocessor residing on said resource-constrained device.

75. (Previously Presented) The software program of claim 69 wherein said resource-constrained device comprises a smart card.

76. (Previously Presented) The software program of claim 69 wherein said resource-constrained device comprises an application-specific integrated circuit (ASIC).

77. (Currently Amended) A resource-constrained device comprising:

a memory for storing an application software program comprising an object-oriented, verifiable, type-safe and pointer-safe sequence of instructions, said instructions comprising operation codes and operands, said instructions previously converted from at least one class file, said conversion transforming at least one reference, of at least one of said instructions, to information in a constant pool to data inlined directly in at least one operand or opcode of said at least one of said instructions so that said at least one reference to information in said constant pool is eliminated because accessing said information in any constant pool is unnecessary for said at least one of said instructions; and

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a virtual machine implemented on a microprocessor, said virtual machine configured to execute said sequence of instructions.

78. (Previously Presented) The resource-constrained device of claim 77 wherein one or more of said references to said constant pool are transformed into inline data in operands in one or more of said instructions.

79. (Previously Presented) The resource-constrained device of claim 77 wherein one or more of said references to said constant pool are transformed into inline data in operation codes in one or more of said instructions.

80. (Previously Presented) The resource-constrained device of claim 77 wherein said resource-constrained device is based on a 16-bit processor architecture.

81. (Previously Presented) The resource-constrained device of claim 77 wherein said resource-constrained device is based on an 8-bit processor architecture.

82. (Previously Presented) The resource-constrained device of claim 77 wherein said resource-constrained device comprises a random access memory with a capacity of no more than about 64 kilo-bytes.

83. (Previously Presented) The resource-constrained device of claim 77 wherein said resource-constrained device comprises a random access memory with a capacity of no more than about 4 kilo-bytes.

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84. (Previously Presented) The resource-constrained device of claim 77 wherein said resource-constrained device comprises a smart card.

85. (Previously Presented) The resource-constrained device of claim 77 wherein said resource-constrained device comprises an application-specific integrated circuit (ASIC).

86. (Previously Presented) The resource-constrained device of claim 77 wherein said resource-constrained device comprises a Java Card™ technology-enabled smart card.

87. (Currently Amended) A resource-constrained device comprising:

a memory, in said resource constrained device, for storing an application software program comprising an object-oriented, verifiable, type-safe and pointer-safe sequence of instructions, said instructions comprising operation codes and operands, said instructions previously converted from at least one class file, said instructions comprising at least one composite instruction for performing an operation on a current object, the execution of said at least one composite instruction, on said resource constrained device, generating a result functionally equivalent to a result generated by operations ~~on said current object~~ resulting from sequential execution of two or more other instructions so that said sequential execution of said two or more other instructions is replaced by said execution of said composite instruction in said sequence of instructions; and

a virtual machine implemented on a microprocessor, in said resource-constrained device, said virtual machine configured to execute said sequence of instructions.

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88. (Previously Presented) The resource-constrained device of claim 87 wherein said resource-constrained device is based on a 16-bit processor architecture.

89. (Previously Presented) The resource-constrained device of claim 87 wherein said resource-constrained device is based on an 8-bit processor architecture.

90. (Previously Presented) The resource-constrained device of claim 87 wherein said resource-constrained device comprises a random access memory with a capacity of no more than about 64 kilo-bytes.

91. (Previously Presented) The resource-constrained device of claim 87 wherein said resource-constrained device comprises a random access memory with a capacity of no more than about 4 kilo-bytes.

92. (Previously Presented) The resource-constrained device of claim 87 wherein said resource-constrained device comprises a smart card.

93. (Previously Presented) The resource-constrained device of claim 87 wherein said resource-constrained device comprises an application-specific integrated circuit (ASIC).

94. (Previously Presented) The resource-constrained device of claim 87 wherein said resource-constrained device comprises a Java Card™ technology-enabled smart card.

95. (Currently Amended) A method for using an application software program including an object-oriented, verifiable,

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type-safe and pointer-safe sequence of instructions, the method comprising:

receiving said software program in a resource-constrained device having a memory, said instructions comprising operation codes and operands, said instructions previously converted from at least one class file, said conversion transforming at least one reference, of at least one of said instructions, to information in a constant pool to data inlined directly in at least one operand or opcode of said at least one of said instructions so that said at least one reference to information in said constant pool is eliminated because accessing said information in any constant pool is unnecessary for said at least one of said instructions; and

executing said sequence of instructions on said resource-constrained device.

96. (Previously Presented) The method of claim 95, further comprising accessing said software program over a computer network prior to downloading said program onto said resource-constrained device.

97. (Previously Presented) The method of claim 95, further comprising storing said sequence of instructions on said resource-constrained device.

98. (Previously Presented) The method of claim 95, further comprising accessing said software program over the Internet prior to downloading said program onto said resource-constrained device.

99. (Previously Presented) The method of claim 95, further comprising transforming constant pool indices that

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appear in the received set of instructions to corresponding data values.

100. (Previously Presented) The method of claim 95 wherein one or more of said references to said constant pool are transformed into inline data in operands in one or more of said instructions.

101. (Previously Presented) The method of claim 95 wherein one or more of said references to said constant pool are transformed into inline data in operation codes in one or more of said instructions.

102. (Previously Presented) The method of claim 95 wherein said resource-constrained device is based on a 16-bit processor architecture.

103. (Previously Presented) The method of claim 95 wherein said resource-constrained device is based on an 8-bit processor architecture.

104. (Previously Presented) The method of claim 95 wherein said memory comprises a random access memory with a capacity of no more than about 64 kilo-bytes.

105. (Previously Presented) The method of claim 95 wherein said memory comprises a random access memory with a capacity of no more than about 4 kilo-bytes.

106. (Previously Presented) The method of claim 95 wherein said instructions are configured for execution by a virtual machine running on a microprocessor residing on said resource-constrained device.

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107. (Previously Presented) The method of claim 95 wherein said resource-constrained device comprises a smart card.

108. (Previously Presented) The method of claim 95 wherein said resource-constrained device comprises an application-specific integrated circuit (ASIC).

109. (Currently Amended) A method for using an application software program including an object-oriented, verifiable, type-safe and pointer-safe sequence of instructions, the method comprising:

receiving said software program in a resource-constrained device having a memory, said instructions comprising operation codes and operands, said instructions previously converted from at least one class file, said instructions comprising at least one composite instruction for performing an operation on a current object, the execution of said at least one composite instruction, on said resource constained device, generating a result functionally equivalent to a result generated by operations ~~on said current object~~ resulting from sequential execution of two or more other instructions so that said sequential execution of said two or more other instructions is replaced by said execution of said composite instruction in said sequence of instructions executed on said resource-constrained device; and

executing said sequence of instructions on said resource-constrained device.

110. (Previously Presented) The method of claim 109, further comprising accessing said software program over a computer network prior to downloading said program onto said resource-constrained device.

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111. (Previously Presented) The method of claim 109, further comprising storing said sequence of instructions on said resource-constrained device.

112. (Previously Presented) The method of claim 109, further comprising accessing said software program over the Internet prior to downloading said program onto said resource-constrained device.

113. (Previously Presented) The method of claim 109, further comprising transforming constant pool indices that appear in the received set of instructions to corresponding data values.

114. (Previously Presented) The method of claim 109 wherein one or more of said references to said constant pool are transformed into inline data in operands in one or more of said instructions.

115. (Previously Presented) The method of claim 109 wherein one or more of said references to said constant pool are transformed into inline data in operation codes in one or more of said instructions.

116. (Previously Presented) The method of claim 109 wherein said resource-constrained device is based on a 16-bit processor architecture.

117. (Previously Presented) The method of claim 109 wherein said resource-constrained device is based on an 8-bit processor architecture.

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118. (Previously Presented) The method of claim 109 wherein said memory comprises a random access memory with a capacity of no more than about 64 kilo-bytes.

119. (Previously Presented) The method of claim 109 wherein said memory comprises a random access memory with a capacity of no more than about 4 kilo-bytes.

120. (Previously Presented) The method of claim 109 wherein said instructions are configured for execution by a virtual machine running on a microprocessor residing on said resource-constrained device.

121. (Previously Presented) The method of claim 109 wherein said resource-constrained device comprises a smart card.

122. (Previously Presented) The method of claim 109 wherein said resource-constrained device comprises an application-specific integrated circuit (ASIC).

123. (Currently Amended) An apparatus for using an application software program including an object-oriented, verifiable, type-safe and pointer-safe sequence of instructions, the apparatus comprising:

means for receiving said software program in a resource-constrained device having a memory, said instructions comprising operation codes and operands, said instructions previously converted from at least one class file, said conversion transforming at least one reference, of at least one of said instructions, to information in a constant pool to data inlined directly in at least one operand or opcode of said at least one of said instructions so that said at least one reference to

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information in said constant pool is eliminated because accessing said information in any constant pool is unnecessary for said at least one of said instructions; and

means for executing said sequence of instructions on said resource-constrained device.

124. (Previously Presented) The apparatus of claim 123, further comprising means for accessing said software program over a computer network prior to downloading said program onto said resource-constrained device.

125. (Previously Presented) The apparatus of claim 123, further comprising means for storing said sequence of instructions on said resource-constrained device.

126. (Previously Presented) The apparatus of claim 123, further comprising means for accessing said software program over the Internet prior to downloading said program onto said resource-constrained device.

127. (Previously Presented) The apparatus of claim 123, further comprising means for transforming constant pool indices that appear in the received set of instructions to corresponding data values.

128. (Previously Presented) The apparatus of claim 123 wherein one or more of said references to said constant pool are transformed into inline data in operands in one or more of said instructions.

129. (Previously Presented) The apparatus of claim 123 wherein one or more of said references to said constant pool

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are transformed into inline data in operation codes in one or more of said instructions.

130. (Previously Presented) The apparatus of claim 123 wherein said resource-constrained device is based on a 16-bit processor architecture.

131. (Previously Presented) The apparatus of claim 123 wherein said resource-constrained device is based on an 8-bit processor architecture.

132. (Previously Presented) The apparatus of claim 123 wherein said memory comprises a random access memory with a capacity of no more than about 64 kilo-bytes.

133. (Previously Presented) The apparatus of claim 123 wherein said memory comprises a random access memory with a capacity of no more than about 4 kilo-bytes.

134. (Previously Presented) The apparatus of claim 123 wherein said instructions are configured for execution by a virtual machine running on a microprocessor residing on said resource-constrained device.

135. (Previously Presented) The apparatus of claim 123 wherein said resource-constrained device comprises a smart card.

136. (Previously Presented) The apparatus of claim 123 wherein said resource-constrained device comprises an application-specific integrated circuit (ASIC).

137. (Currently Amended) An apparatus for using an application software program including an object-oriented,

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verifiable, type-safe and pointer-safe sequence of instructions, the apparatus comprising:

means for receiving said software program in a resource-constrained device having a memory, said instructions comprising operation codes and operands, said instructions previously converted from at least one class file, said instructions comprising at least one composite instruction for performing an operation on a current object, the execution of said at least one composite instruction, on said resource-constrained device, generating a result functionally equivalent to a result generated by operations ~~on said current object~~ resulting from sequential execution of two or more other instructions so that said sequential execution of said two or more other instructions is replaced by said execution of said composite instruction in said sequence of instructions executed on said resource-constrained device; and

means for executing said sequence of instructions on said resource-constrained device.

138. (Previously Presented) The apparatus of claim 137, further comprising means for accessing said software program over a computer network prior to downloading said program onto said resource-constrained device.

139. (Previously Presented) The apparatus of claim 137, further comprising means for storing said sequence of instructions on said resource-constrained device.

140. (Previously Presented) The apparatus of claim 137, further comprising means for accessing said software program over the Internet prior to downloading said program onto said resource-constrained device.

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141. (Previously Presented) The apparatus of claim 137, further comprising means for transforming constant pool indices that appear in the received set of instructions to corresponding data values.

142. (Previously Presented) The apparatus of claim 137 wherein one or more of said references to said constant pool are transformed into inline data in operands in one or more of said instructions.

143. (Previously Presented) The apparatus of claim 137 wherein one or more of said references to said constant pool are transformed into inline data in operation codes in one or more of said instructions.

144. (Previously Presented) The apparatus of claim 137 wherein said resource-constrained device is based on a 16-bit processor architecture.

145. (Previously Presented) The apparatus of claim 137 wherein said resource-constrained device is based on an 8-bit processor architecture.

146. (Previously Presented) The apparatus of claim 137 wherein said memory comprises a random access memory with a capacity of no more than about 64 kilo-bytes.

147. (Previously Presented) The apparatus of claim 137 wherein said memory comprises a random access memory with a capacity of no more than about 4 kilo-bytes.

148. (Previously Presented) The apparatus of claim 137 wherein said instructions are configured for execution by a

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virtual machine running on a microprocessor residing on said resource-constrained device.

149. (Previously Presented) The apparatus of claim 137 wherein said resource-constrained device comprises a smart card.

150. (Previously Presented) The apparatus of claim 137 wherein said resource-constrained device comprises an application-specific integrated circuit (ASIC).

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